REMARKS

Reconsideration of this application is respectfully requested.

The proposed amendment to the drawing uses an arrow for reference numeral 42 to make it clear that reference numeral 42 refers to the press assembly and reference 47 refers to the framework which supports various components of the press assembly. The second full paragraph on page 5 has been amended to refer to the press assembly 2, and a new paragraph has been added on page 6 to state that the press assembly 42 includes the framework 47 and components which are supported by the framework.

Claim 1 has been amended to state that the flexographic press prints a web with a solvent based or water based ink and describes a plate cylinder for applying solid based or water based ink to a web on the central impression cylinder. The description of dependent claim 2 has also been incorporated into claim 1 to describe the absence of a dryer between the exit point from the central impression cylinder and the rewind apparatus.

The amendment to claim 1 is supported by page 1, lines 2-5.

Claim 8 has been amended to state that the downstream dryer includes a nozzle plenum for directing cold air against the web. This amendment is supported by page 8, line 1-4.

New claims 9-12 have been added. Claim 9 is supported by page 7, lines 6-25. Claim 10 is supported by page 7, last line to page 8, line 7. Claim 11 is supported by Figure 2, page

6, lines 10-14, and page 9, lines 6-9. Claim 12 is supported by Figure 2, page 5, lines 22-26, and page 9, lines 6-9.

The Summary of the Invention states that the goal of the invention is to create an economical printing press that will allow the use of thin gauge, highly elastic films in a flexographic printing press. To accomplish this task, the printed ink on the web needs to be dried before the web is removed from the impression cylinder. By maintaining the web on the drum throughout the entire drying process, the web will not be susceptible to the disturbances seen in present machines. All of the dryers are located around the perimeter of the impression cylinder, and no tunnel dryer is used between the exit from the impression cylinder and the rewind apparatus.

Claim 1 was rejected as being anticipated by Lovin et al, and claim 2 was rejected as unpatentable over Lovin et al in view of George.

Lovin et al recognizes the problem of heat shrinking the web:

> "Heretofore, flexographic printing systems and methods employed solvent based ink systems or water based ink systems which allowed for the inter-station drying to be accomplished by blowing hot air on the substrate or web being printed. There are a number of disadvantages associated with these known, systems and methods.
>
> A major disadvantage associated with solvent based ink systems results from the fact that the solvents in the ink systems are evaporated from the inks during the ink drying process thereby releasing volatile organic chemicals

> into the atmosphere. Today there are increasing government regulations which require the reduction and eventually the total elimination of the emission of these volatile organic chemicals to the atmosphere. In addition to the emissions problem noted above, there is an inherent explosive hazard associated with solvent ink printing systems which are heat dried. A third and particularly troubling problem associated with the food packaging art is the inherent shrink problem which are heat dried. A third and particularly troubling problem associated with the food packaging art is the inherent shrink problem which results from heat curing solvent ink systems on heat shrinkable flexible webs which are used extensively in the food packaging art. In order to avoid shrinkage very long ovens must be employed to gradually dry the web.
>
> Water based ink systems have been increasingly used in flexographic printing systems and methods in an effort to eliminate the emissions and explosive hazard problems associated with solvent based ink systems as noted above. Water based ink systems, however, are subject to hot air blowing for interstation drying during flexographic printing and, therefore, suffer from the problems associated with printing on heat shrinkable flexible webs." (Column 1, lines 25-57)

Lovin et al attempts to solve the foregoing problems by using radiation curable ink which is cured by ultraviolet radiation lamps 28, 30, 32, 34, 36, and 38 and an electron beam generator 40 which is located downstream of the final print station 24 and which is similar in position and function to prior art tunnel dryers. The ultraviolet radiation lamps and the electron beam generator of Lovin et al are not dryers and do not

dry solvent based or water based ink. In fact, Lovin et al expressly leads away from using solvent based or water based ink and instead uses radiation curable ink. There is a significant difference between a radiation lamp that "cures" a specially treated radiation curable ink and a dryer that uses evaporation to dry a solvent or water based ink.

Amended claim 1 not only refers to dryers rather than radiation curable lamps or electron beam generators but also refers to the use of solvent based or water based ink and a plate cylinder which applies solvent based or water based ink to the web. Claim 5 adds the description that the downstream dryer includes a plurality of nozzle plenums, a plurality of heat sources, and separate control means for each of the heat sources. Amended claim 8 states that the downstream dryer includes a nozzle plenum for directing air against a web supported by the central impression cylinder and means for supplying unheated air to the nozzle plenum whereby cold air is directed by the nozzle plenum against the web. New claim 9 states that each of the dryers includes a heat source for heating air which is directed by the dryer to a web which is supported by the central impression cylinder.

The Examiner combined Lovin et al with George to reject claim 2. However, George is not concerned about drying. George simply describes a removable print station which is mounted between the central impression cylinder and the rewind. Just because George does not specifically address drying does not mean

that George teaches that drying is not necessary. Further, the disclosure of Lovin et al expressly discourages combining Lovin et al with George. Lovin et al states that, with solvent and water based ink systems, drying is necessary and, indeed, is a major disadvantage. Lovin et al therefore uses a different process (radiation curable ink systems) to avoid the issue of drying solvent or water based inks on shrinkable films. Lovin et al specifically teaches replacing dryers with ultraviolet radiation lamps and an electron beam generator.

Hauer was cited merely for the showing of an air turning bar for guiding a web.

Claims 5-8 were rejected as unpatentable over Lovin et al in view of Mudry. However, as previously discussed, Lovin et al and Mudry relate to two different types of printing systems, and Lovin et al expressly discourages combining that reference with Mudry. Mudry describes a dryer for drying solvent based or water based ink. Mudry specifically teaches the use of both between color dryers and a tunnel dryer for drying the ink. However, Lovin et al discourages the use of solvent based and water based ink and dryers because of the disadvantages which are described in the previously reproduced quotation from Lovin et al, specifically including the problem of shrinking a flexible, heat shrinkable web.

Mudry teaches a method of applying precise temperature and volume to a film material to dry the film between color decks and a tunnel dryer to finish the drying process.

Applicants' invention describes how to place the Mudry dryers both between colors and after all of the colors in the correct quantity, location, and temperature in order to completely dry the shrinkable film without damaging it and while still on the central impression cylinder. The invention totally eliminates the tunnel dryer, which is not taught or suggested by Mudry.

In view of the foregoing, favorable action is respectfully requested.

Respectfully submitted,

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FIG. 2